

Rec'd PCT/PTO 19 MAY 2005 10 3

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

10/535603

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
3 June 2004 (03.06.2004)

PCT

(10) International Publication Number  
WO 2004/046127 A1

- (51) International Patent Classification<sup>7</sup>: C07D 311/72 (74) Agent: MUELLER, Ingrid; Roche Vitamins Ltd., Patent Department (VMD), Wurmisweg 576, CH-4303 Kaiseraugst (CH).
- (21) International Application Number: PCT/EP2003/010837
- (22) International Filing Date: 30 September 2003 (30.09.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 02025990.9 21 November 2002 (21.11.2002) EP
- (71) Applicant (for all designated States except US): DSM IP ASSETS B.V. [NL/NL]; Het Overloon 1, NL-6411 TE Heerlen (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BONRATH, Werner [DE/DE]; Luckenbachweg 29, 79115 Freiburg (DE). HOPPMANN, Simone [DE/DE]; Gustav-Adolf-Strasse 40, 04105 Leipzig, (DE). HAAS, Alois [DE/DE]; Medonstrasse 17, 14532 Kleinmachnow (DE). NETSCHER, Thomas [DE/DE]; Am Huligraben 2, 79189 Bad Krozingen (DE). PAULING, Horst [CH/CH]; Traugott-Meyer-Strasse 2, CH-4147 Aesch (CH).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MANUFACTURE OF  $\alpha$ -TOCOPHEROL

(57) Abstract—A process for the manufacture of (all-*rac*)- $\alpha$ -tocopherol by the acid-catalyzed reaction of trimethylhydroquinone with isophytol or phytol is characterized by carrying out the reaction in the presence of methane trisulphonate as the catalyst in an organic solvent. The product of the process is the most active and industrially most important member of the vitamin E group.

WO 2004/046127 A1